

**REPORT
in the matter of**

United States of America v. Souleymane Balde

by

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I. INTRODUCTION

1. I am a Director of BLDS, LLC, a specialty consulting firm. Prior to joining BLDS, I did similar work at the specialty consulting firms, LECG, LLC, the Center for Forensic Economic Studies, Inc., and National Economic Research Associates (NERA). Prior to that, I was a tenured faculty member and Chairman of the Department of Statistics at Temple University in Philadelphia. I received my Ph.D. in Statistics with a minor in Econometrics from the Wharton School of the University of Pennsylvania in 1970. I have authored four books on statistical methodology, three book chapters, four research monographs, and numerous papers, including articles on the role of statistics in the analysis of employment discrimination issues. Since receiving my Ph.D., I have specialized in the application of statistics to the analysis of employment practices. In this capacity, I have been retained by numerous governmental private organizations including, but not limited to, the Third Circuit Task Force on Race and Gender, the Equal Employment Opportunity Commission (EEOC), the Civil Rights Division of the United States Justice Department, the Office of Federal Contract Compliance (OFCCP), the Federal Bureau of Investigation, and various states and municipalities as well as numerous private corporations. My resume is attached as Appendix A.

II. ASSIGNMENT

2. I have been asked by Counsel for the United States to assess the extent to which the master jury wheel and qualified jury wheel drawn for use in White Plains, in the Southern

District of New York from the November 1, 2016 jury eligible population is representative of the community from which it is supposed to be drawn. The population for which the jury is meant to be representative is normally defined as the population of citizens of the United States who are at least 18 years old who reside in the community. To the extent there is a difference in representation between the qualified jury wheel and the community of African Americans or Blacks (referred to herein as African Americans) and of Hispanics or Latinos (referred to herein as Hispanics), I was asked to assess the cause(s) of the difference. I also was asked to comment on the appropriateness and accuracy of the defendant's expert Jeffery Martin's assessment of the difference between the qualified jury wheel and the community.

III. EXECUTIVE SUMMARY

3. The African American percentage of the White Plains qualified jury wheel was 3.69 percentage points lower than that in the White Plains community (8.76% versus 12.45%, respectively) and the Hispanic percentage was 3.64 percentage points lower than that in the White Plains community (10.48% versus 14.12%, respectively). This is consistent with what Defendant's expert Mr. Martin reports in his declaration.

4. The disparities were almost exclusively due to the pattern of African Americans and Hispanics having been sent a juror questionnaire, and being found to be qualified as a juror and not excused at a significantly lower rate than other races or ethnicities after returning the questionnaire. Of the 3.69 percentage point difference by race (African American), 2.58 (or 69.9% of the absolute disparity) is caused by this factor. Of the 3.64 percentage point difference by ethnicity (Hispanic), 2.59% (or 71.2% of the absolute disparity) is caused by this factor.

5. Tracking the percent African American and Hispanic individuals in the community through to the percent African American and Hispanic individuals on the White Plains qualified

jury wheel, I was able to identify and measure the various causes of the absolute disparity between the community and the qualified jury wheel.

6. The first step in the process of analyzing the qualified jury wheel is to re-create the master jury wheel. The master jury wheel is supposed to be a simple random selection from the voter registration lists. The master jury wheel was chosen from the November 1, 2016 county voter registration lists. Based on geocoding the master jury wheel, I was able to estimate that a proper random sample from the complete November 1, 2016 voter registration lists would have been 11.88% African American and 13.79% Hispanic. Hence, if a simple random sample had been selected, the absolute difference between the African American percent in the master jury wheel and the community would have been only 0.57 percentage points, and the absolute difference between the Hispanic percent in the master jury wheel and the community would have been only 0.33 percentage points. Hence, the voter lists are a good representation of the community benchmarks for representation of African Americans and Hispanics

7. As pointed out by defendant's expert Mr. Martin, the selection of the individuals on the master jury wheel was not a simple random sample from the November 1, 2016 voter registration lists. That is, all registered voters did not have an equal chance of selection. There were two reasons for this. One, registered voters from the counties which provided jurors to both the Manhattan and White Plains master jury wheels were less likely to be selected than registered voters in counties which fed only the White Plains master jury wheel. Two, except for Dutchess County, inactive registered voters were not selected for the master jury wheel.¹ These reasons were responsible for the actual master jury wheel being only 11.20% African American and

¹ The voter registration lists for all counties but Dutchess did not include inactive registered voters.

12.97% Hispanic. Thus, the decision to not draw a proper random sample accounts for 0.68% of the absolute disparity between the actual master jury wheel and a random sample master jury wheel for African Americans and 0.82% of the absolute disparity for Hispanics.

8. Based on the geocoding of the master jury wheel, it is evident that the percentage of African Americans and Hispanics of the actual White Plains master jury wheel is similar to the estimate of the percentage of African Americans and Hispanics in the White Plains community. The percent African American of the master jury wheel is 1.25 percentage points lower than that of the community, (12.45% versus 11.20%) and the percent Hispanics of the master jury wheel is 1.15 percentage points lower than that of the community (14.12% versus 12.97%).

9. Mr. Martin notes that the disparity between the master jury wheel and the qualified jury wheel is impacted by a clerical error in transcribing the individual's mailing address. This clerical error affected every county except Westchester. However, the impact of this clerical error on the absolute difference between the master jury wheel and the qualified jury wheel for the African American percentage is negligible, and the error actually reduced the absolute difference between the master jury wheel and the qualified jury wheel for African Americans and Hispanics.

10. In sum, as (i) the voter registration lists and the master jury wheel created from these lists reasonably mirror the representation of the community (an absolute disparity equal to or less than 1.25%), but (ii) because African Americans and Hispanics were less likely to respond to the questionnaire used to determine if the potential juror was qualified, and/or (iii) because African Americans and Hispanics who responded were less likely to be found qualified, and/or (iv) because African Americans and Hispanics who were found qualified were more likely to be excused, the absolute disparity between the White Plains qualified jury wheel and the White

Plains community benchmark for African Americans increased from 1.25% to 3.69% and for Hispanics increased from 1.15% to 3.64%.

11. Mr. Martin also compared the qualified jury wheel for White Plains with the Manhattan community and for the overall Southern District community. The White Plains master jury wheel is designed to be representative of the White Plains community, not the Manhattan or Southern District community. The Manhattan and the Southern District communities are significantly more African American and Hispanic than the White Plains community. Thus, since the White Plains master jury wheel is designed to be representative of the White Plains community, by design it will not be representative of the Manhattan or the Southern District community with respect to the percent African American and Hispanic.

IV. DATA RELIED UPON

12. The data I received and relied upon is listed in Appendix B of this declaration.

V. FINDINGS

A. Overview of Qualified Jury Wheel Selection Process.

13. The master jury wheel which forms the basis for the qualified jury wheel for the White Plains community of the Southern District of New York is supposed to be drawn via a simple² random sample from the voter lists from the six counties (Westchester, Putnam, Rockland, Orange, Sullivan and Dutchess) making up White Plains. The November 1, 2016 voter registration lists were used to construct the master jury wheel used in this matter. However, either by design or in error, the selection from the voter lists was not actually a simple

² A simple random sample is one where each person in the population has an equal probability of being selected.

random sample. First, the inactive voters in all counties except Dutchess were excluded from selection. Assuming that they should have been considered,³ this exclusion resulted in the sample frame (the voter lists) being improperly defined for all counties except Dutchess. The second issue is that, of the six counties which make up the White Plains community, three counties feed both the Manhattan and White Plains master jury wheel, while three counties feed only White Plains. The process for selecting for the White Plains master jury wheel from the three non-overlapping counties was to select one out of every three voters, while the process for selecting from the three overlapping counties was to select one out of every 4.5 voters.⁴ Thus, the White Plains sampling methodology underrepresents the voters in the three overlapping counties.⁵

14. If the sample from the voter registration lists had been a simple random sample, then the master jury wheel would be expected to mirror that of the voter registration lists as of November 1, 2016. Any difference would be due to chance as a result of random selection and, given the large number of selections, the difference due to chance should be trivial. Of course, the master jury wheel could vary from the actual demographics of the community due to

³ There may be some valid reason for excluding inactive voters, but inactive voters from Dutchess county were included in the selection process, and some inactive voters responded and were on the qualified jury wheel. Thus, I assume that the exclusion of the inactive voters was in error and I explore the impact of this error in explaining any differences between the wheel and community demographics.

⁴ The methodology was to first select the Manhattan wheel by selecting one out of every 3 voters from each county in the Manhattan community, and then for the overlapping counties to remove those selected for the Manhattan wheel from consideration for the White Plains community and then selecting one out of every 3 of the remaining voters. The result is that, considering all voters in the county, only 1 out of every 4.5 are selected for the White Plains community.

⁵ The procedure may have been a compromise between having an overly burdensome process for voters in the overlapping counties whose chances of jury selection would be twice that of voters in non-overlapping counties and the underrepresentation of voters in the overlapping counties in the White Plains master jury wheel.

systematic differences in the populations of those who register to vote by race or ethnicity. That is, if African Americans or Hispanics are less likely (or more likely) to register to vote, then the selection from the voter lists would be expected to underrepresent (or overrepresent) African Americans and Hispanics to the extent that the likelihood of not registering to vote differs among the demographic groups.

15. Since jurors are always anticipated to be needed for future trials, at least once a year, persons on the master jury wheel are selected for possible jury duty via simple random sampling. Those randomly selected are sent questionnaires to determine their qualifications to sit as a juror. The names of persons who complete and return the questionnaire and are found to be qualified as jurors are placed on the qualified jury wheel from which jurors are selected, unless they are granted an exclusion from jury service. If the demographics of the master jury wheel and qualified juror wheel differ, it is because of demographic differences in the population of those who return the questionnaire and/or are found to be qualified and/or excused.⁶

B. Analyzing If There is a Difference in the Demographics of the White Plains Qualified Jury Wheel and the Demographics of the White Plains Community.

16. The only statistic we actually know that will allow us to assess the difference between the demographics of the White Plains qualified jury wheel and the comparable demographics of the White Plains community is the racial and ethnic make-up of the qualified jury wheel.

17. Based on the actual potential jurors' responses concerning their race and ethnicity, the White Plains qualified jury wheel is 8.76% African American and 10.48% Hispanic.

⁶ Some small increase or decrease in the representation of African Americans and Hispanics would be expected to occur by chance, but this is unlikely to have any meaningful impact of the absolute disparity for African Americans and Hispanics.

18. The master jury wheel, which defined the potential pool of jurors for the qualified jury wheel, was based on the voter registration lists as of November 1, 2016 and was used to select all potential pools of jurors for juries composed after that date. The date on which the comparable demographics of the community should be ascertained is unclear. Should it be the population as of November 1, 2016 or some date thereafter? Of course, data on the population in the community is not available for any specific date. The best one can do is look at the best available data closest the appropriate date. The best data source is the latest available American Community Survey (ACS) data published by the U.S. Census Bureau. The latest available data is the 2018 5- year survey combining the 2014, 2015, 2016, 2017, and 2018 survey data.⁷ The 2018 survey includes data both before and after November 1, 2016. The ACS collects survey information continuously nearly every day of the 5 years and then aggregates the results. The data collection is spread evenly across the entire period represented, so as not to overrepresent any particular month or year within the period, but it does not measure the population at a single point in time. The decennial census samples are designed to measure characteristics as of a certain date (or a narrow time period). For example, Census 2010 was designed to measure the characteristics of the population and housing in the United States based upon data collected around April 1, 2010, and thus its data reflects a narrower time frame than ACS data. If areas have consistent population characteristics throughout the ACS time period, their period estimates may not look much different from estimates that would be obtained from a “point-in-time” survey design. However, if areas experience significant changes in the characteristics of the population over the time period, ACS period estimates (especially for a 5- year period) may noticeably differ from “point-in-time” estimates. I mention this only to point out that there will

⁷ The 2019 ACS is due to be released to the public on December 10, 2020.

almost always be a disconnect between the estimate of the demographics of the community and the demographics of the master jury wheel, simply because there will be a disconnect between the timing of the two estimates. Regardless of whether one believes the appropriate point in time to define the comparable community population should be as of November 1, 2016 or some date thereafter, the best available data to estimate the demographics of the community is the 5-year 2018 ACS.

19. Using the ACS data concerning the population of U.S. citizens at least 18 years of age residing in the counties comprising White Plains, the racial and ethnic representation is 12.45% African American and 14.12% Hispanic.

20. Comparing the demographics of the White Plains community to the demographics of the qualified jury wheel, we find that the African American representation in the community is 3.69 percentage points higher than their representation on the qualified jury wheel (12.45%-8.76%) and the Hispanic representation in the community is 3.64 percentage points higher than their representation on the qualified jury wheel (14.12%-10.48%).

21. Whether this difference is practically significant or legally meaningful is a decision for the Court. To aid the Court in its determination, I have estimated the impact of the various causes for these differences.

C. Determining and Measuring the Causes of the Difference Between the Demographics of the Qualified Jury Wheel and the Estimate of the Demographics of the Community of Which the Qualified Jury Wheel is Supposed to be Representative.

22. As discussed above, the first step in the process of creating the qualified jury wheel is to re-create the master jury wheel. The master jury wheel is supposed to be a simple random sample from the registered voter lists of the counties making up White Plains. After selecting potential jurors for the master jury wheel, simple random samples of the potential jurors are

selected and those selected are sent a questionnaire to determine if they are qualified. The names of persons who complete and return the questionnaire and are found to be qualified as a juror, unless granted an exception from jury service, are then placed on the qualified jury wheel from which potential jurors are summoned.

23. What in this process could cause the difference in the percent African American and percent Hispanic between the benchmark and the qualified jury wheel? Below is a list of all likely possible causes of such a difference. In considering the differences, I view the process as moving sequentially from the voter registration lists to the qualified jury wheel, and I compare the absolute disparity in the percent African American and Hispanic at each step with that of the community.

24. Reasons 1-3 focus on the causes of the differences between a master jury wheel that is drawn from the voter registration list such that every registered voter in White Plains as of November 1, 2016 had an equal likelihood of being included, and the community. Reasons 4-5 focus on the causes of the differences between the actual master jury wheel and such a randomly drawn master jury wheel. Reasons 6-8 focus on the causes of the differences between the qualified jury wheel and the master jury wheel.

Reasons:

Community vs Randomly Selected Master Jury Wheel from Voter Registration Lists

- 1) The community may differ from the randomly selected master jury wheel because U.S. citizens of voting age (*i.e.*, the community) and those registered to vote (*i.e.*, the master jury wheel) are different.
- 2) The estimate of the demographics of the community may differ from the demographics of those on the voter registration lists because the estimates are from different times and also

because the voter list demographics are as of a specific point in time, while the community estimate is over a five-year period of time (2014-2018).

- 3) The community may differ from the randomly selected master jury wheel because of chance in selection from the voter registration lists.

Randomly Selected Master Jury Wheel vs Actual Master Jury Wheel

- 4) The actual master jury wheel may differ from a randomly drawn master jury wheel because the sample selection underweights the probability of selection from the counties feeding both the White Plains and Manhattan master jury wheels. This is referred to as the “prorating” issue.
- 5) The actual master jury wheel may differ from a randomly drawn master jury wheel because, in five of the six counties, the voter registration lists did not include inactive voters. This is referred to as the “sample frame” issue.

Qualified Jury Wheel vs Master Jury Wheel

- 6) The qualified jury wheel may differ from the master jury wheel because of clerical errors in transferring the mailing (alternative) address to the master jury wheel, which potentially results in not being able to properly reach some potential jurors on the master jury wheel to determine if they should be placed on the qualified jury wheel.
- 7) The qualified jury wheel may differ from the master jury wheel because being sent a questionnaire, returning the questionnaire, and being found to be qualified as a juror and not excused are different by race or ethnicity.
- 8) The qualified jury wheel may differ from the master jury wheel by chance resulting from the random selection of those on the master jury wheel who will be sent a questionnaire.

25. Now that I have defined the likely causes, the next step is to estimate the effect of each of these causes.

Reasons 1, 2, and 3

26. The first reason requires analysis of the master jury wheel and the voter registration lists, which do not contain reliable race and ethnicity information. Therefore, I had to estimate the race and ethnicity composition of the master jury wheel and voter registration lists. The common and widely used method for estimating race is geocoding.⁸ Geocoding is based on estimating the proportion of persons who are of a given race based on the racial mix of where they live. In defining where they live, I used the residence address on the voter registration list. Conceptually, geocoding uses the racial/ethnic mix of the area where one resides to estimate the race of persons on the list from that area. That is, if 100 persons on the master jury wheel live in an area in which 85% of the voter age U.S. citizens are African American, then we would estimate that 85 of these 100 are African American, and 15 are not. Assuming that the probability of being randomly selected for the master jury wheel if you live in that area is the same for everyone, this estimate will be very reliable, especially if we are selecting large numbers of persons. For example, if there are 343,984 (the size of the master jury wheel) selections from the area, the probability is 95% that the actual percent of African Americans will be within .001 percentage points of 85%. The more homogeneous the areas defined for the geocoding, the more accurate the estimate of the race of the wheel will be. To maximize accuracy of the geocoding, I defined the area as the census tract,⁹ which is the smallest area for which information about the race of voter age U.S. citizens was available. The smaller the area,

⁸ Defendant's expert also geocoded the voter registration lists.

⁹ Census tracts generally have a population size between 1,200 and 8,000 people, with an optimum size of 4,000 people. A census tract usually covers a contiguous area.

and the more homogeneous the area, the more accurate the geocoding estimate. I defined the population in the census tract as U.S. citizens of voting age. To estimate the percent Hispanic, I used the Bayesian Improved Surname Geocoding (BISG) method, which enhances the accuracy of the geocoding by also using information about the ethnicity of a person's last name. This method has been shown to significantly improve the estimation for Hispanics.¹⁰

27. There is one constraint on the accuracy of the geocoding methodology. The basic assumption is that if the potential voting eligible population (U.S. citizens of voting age) in a census tract is 85% African American, then we would expect 85% of those on the master jury wheel who reside in that census tract to be African American. However, since the master jury wheel is selected from registered voters and not from potentially voting-eligible persons, this assumes that the likelihood of registering to vote for those who live within the same census tract is the same by race and ethnicity. If African Americans and/or Hispanics are less likely to register to vote, the results of the geocoding will overestimate the percent of African Americans and Hispanics on the master jury wheel (reason 1). However, there is no valid statistical evidence to conclude there is such a difference.¹¹

28. Based on the geocoding, the race and ethnicity representation of the master jury wheel is 11.20% African American and 12.97% Hispanic. Thus, the master jury wheel is 1.25

¹⁰ For additional information on BISG, see Elliott, M.N., Morrison, P.A., et al. "Using the Census Bureau's Surname List to Improve Estimates of Race/Ethnicity and Associated Disparities" in *Health Serv Outcomes Res Method* 9:69-83 (2009).

¹¹ The only data available on citizens registering to vote by race and ethnicity is published by the U.S. Census Bureau, Current Population Survey November 2016, and it shows the rates across the state, not within the same census tract. The difference in rates of registering by race and ethnicity statewide would be expected to be greater than within census tracts. The data for November 2016 shows African American citizens more likely to register by 1 percentage point, and Hispanic citizens less likely to register by 7.2 percentage points. Neither of these differences are statistically significant.

percentage points less African American than the estimated percent in the community and 1.15 percentage points less Hispanic than the estimated percent in the community.

29. While the demographics of the master jury wheel are similar to those of community, they are not identical. Looking at the list of reasons above, the difference between the voter registration lists and the community could be caused by reason 1 and/or by reason 2 or by reason 3, which explain why differences in the voter registration lists and a randomly drawn master jury wheel from the voter lists may occur. Alternatively, the difference may be caused by reason 4 and/or reason 5 and/or reason 6 which explain why differences between the master jury wheel and voter lists may occur.

30. Focusing initially on the difference between a randomly drawn master jury wheel and the voter registration file, one possible cause (reason 3) is due to chance in randomly selecting from the voter registration lists. While possible, it is highly unlikely to be a meaningful cause of the disparity. The master jury wheel is supposed to be a simple random sample drawn from the voter registration lists. Given the size of the sample drawn, the representation on the master jury wheel should almost perfectly mirror the demographics of the voter registration lists. It is highly likely that chance variation would only result in at most a 0.001 difference between the master jury wheel and the voter registration lists in their demographic characteristics. Hence, the difference between the community and a randomly drawn sample from the voter registration lists must be almost exclusively because of differences between the voter registration lists and the community (reasons 1 and 2). As shown herein, the voter registration lists are a good source from which to pick a wheel that is representative of the community benchmarks for African Americans and Hispanics. The absolute disparity between a randomly drawn master jury wheel from the voter registration lists is only 0.57% for African Americans and 0.33% for Hispanics.

Reasons 4 and 5

31. The actual selection of the master jury wheel was not a simple random sample from the November 1, 2016 voter registration lists.¹² Reasons 4 and 5 delineate why the selection from the voter registration list was not a simple random sample. The impacts of this can easily be measured by simply estimating what the demographics of the master jury wheel would have been if the sample had been a simple random sample. The difference thus measures the impact of not drawing a simple random sample. For reason 4, the prorating issue, we can exactly measure the impact by simply weighting upward the selections from the overlapping counties so that they represent 1/3 of the registered voters in those counties, as do the actual selections for the non-overlapping counties, and then seeing what effect it has on the percent African American and Hispanic. To address reason 5, the sample frame issue, in order to determine the demographics of a random master jury wheel if they had been considered, we need to know two things. One, we need to know the number of inactive voters in each of these counties who were not considered, and two, we need to know what the percent African American and Hispanic is among those inactive voters. While I have the counts of inactive voters in each county, unfortunately, I was not supplied with, nor do I have access to names and addresses necessary to determine the extent to which the demographic characteristics of inactive and active registered voters are different. This information is available only for Dutchess county. Therefore, precisely determining the characteristics of a sample frame including the inactive voters can only be done for Dutchess county, where such data exists. However, if we assume that the relative difference (percent change in percent African American or Hispanic) in the percent African

¹² A simple random sample is one in which the sample frame is unbiased and each element in the frame has an equal probability of selection.

American or Hispanic between active and inactive votes in other counties is the same as in Dutchess, we can estimate what the master jury wheel demographics would have been if inactive voters were considered in selecting potential jurors for all counties, not just Dutchess.

32. The analysis shows that, with respect to the prorating issue (reason 4), the impact of the proportionality was to lower the African American percentage by 0.34 percentage points and also lower the Hispanic percentage by 0.39 percentage points on the master jury wheel. The sample frame issue (reason 5) meant inactive voters were not in the sampling frame for selection to the actual master jury wheel and, as a result, the number of selections on the master jury wheel was lower than it would have been had they been in the sampling frame for selection.¹³

However, the real question is what the impact of this restricted sampling frame on the African American and Hispanic percentages was. I estimate that the African American percentage was reduced by 0.34 percentage points and the Hispanic percentage was reduced by 0.43 percentage points due to the failure to consider inactive voters for the master jury wheel.

33. Thus, the failure to take a simple random sample (*i.e.*, the combination of reasons 4 and 5) resulted in the actual master jury wheel representation of African Americans being 0.68 percentage points lower and Hispanics being 0.82 lower and, as a result, the absolute disparity between the actual master jury wheel and the community was 1.25 for African Americans and 1.15 for Hispanics.

¹³ The number of persons on the master jury wheel would have increased by 6,270 (or 7.9%). The number of master jury wheel selections from Putnam would have increased by 1,799 (or 7.8%). The number of master jury wheel selections from Rockland would have increased by 3,051 (or 6.7%). The number of master jury wheel selections from Sullivan would have increased by 2,383 (or 13.55%) and the number of master jury wheel selections from Westchester would have increased by 11,841 (or 8.1%).

Reasons 6, 7, and 8

34. The last step in creating the qualified jury wheel is the selection from the master jury wheel of those deemed qualified and not excused. Reasons 6, 7 and/or 8 are the potential causes of any disparity between the qualified jury wheel and the master jury wheel.

35. Focusing on the difference between the master jury wheel and the qualified jury wheel, one possible cause (reason 8) is that the qualified jury wheel differs from the master jury wheel because of chance in selecting persons from the voter registration lists to be sent a questionnaire to determine if they are qualified and not excused and should therefore be moved to the qualified jury wheel. While possible, it is not expected that the demographics of those mailed a questionnaire will meaningfully differ from those not mailed a questionnaire. Any variation should be random and equally likely to overrepresent or underrepresent any race or ethnicity. Those mailed a questionnaire are chosen by a simple random sample drawn from the master jury wheel. Given the size of the samples drawn, the representation on the master jury wheel should closely mirror the demographics of the voter lists.

36. However, some difference between the qualified jury wheel and the master jury wheel may be caused by the clerical error in transferring alternative mailing addresses to the master jury wheel (reason 6), which was noted by defendant's expert Mr. Martin. If the clerical error disproportionately impacted African Americans and Hispanics either positively or negatively it could explain some of the difference between the qualified jury wheel and the master jury wheel. That is, the clerical error failure to pick up the zip code from the alternative addresses on the voter registration list likely prevented the questionnaire from reaching those who provided alternative addresses. All who were affected by this error were less likely to respond to the questionnaire, but we do not know if the error affected more African Americans

or Hispanics or fewer. Thus, the disparity may be because the clerical error led to African Americans and Hispanics being more likely or less likely to not respond to the mailed questionnaire because they did not receive the questionnaire due to this issue. I was able to identify the persons on the master jury wheel whose questionnaire was mailed to the incomplete alternative mailing address on the voter registration list. None of these persons responded to the questionnaire, presumably because they never received it due to the clerical error. Assuming that, absent the clerical error, these persons would have received the questionnaire and made it onto the qualified jury wheel at the same rate as those in the county who were not subject to the clerical error, I estimated the number of additional persons who would have made it on to the qualified jury wheel by race and ethnicity. Overall, 1,681 additional persons would have made it onto the qualified jury wheel, of which 111 (or 6.60%) would have been African American and 149 (or 8.87%) would have been Hispanic. That is, correcting this clerical error would increase the number of persons on the qualified jury wheel, but lower the percent of persons on the qualified jury wheel that were African American and Hispanic. Based on this analysis, I estimated that if the clerical error had not been made, the percent African American on the qualified jury wheel would have slightly decreased by 0.14 percentage points (from 8.76% up 8.62%) while the percent Hispanic on the qualified jury wheel would have slightly decreased by 0.10 percentage points (from 10.48% down to 10.38%). Obviously, this clerical error is not a cause of the difference in African American and Hispanic representation between the qualified jury wheel and the community.

37. The final and dominant cause of the difference between the qualified jury wheel and the master jury wheel, and hence the difference between the qualified jury wheel and the community, is the fact that when African Americans and Hispanics on the master jury wheel are

randomly selected and sent questionnaires, they are less likely to return the questionnaire, and/or they are more likely to be found not qualified as a juror when they return the questionnaire, and/or they are more likely to be excused when found qualified, and, hence, African Americans and Hispanics are less likely to be moved from the master jury wheel onto the qualified jury wheel (reason 7). As a result of this, the percent of African Americans on the qualified jury wheel is 2.58 percentage points lower and the percent of Hispanics is 2.59 percentage points lower. This accounts for all of the absolute difference between the qualified jury wheel and master jury wheel and 69.9% of the absolute difference between the qualified jury wheel and the community for African Americans and 71.2% for Hispanics.

38. The summary of the results of the analysis of the impact of the various causes on the difference between the qualified jury wheel and the community are presented in the table below.

**ANALYSIS OF ABSOLUTE DISPARITY BETWEEN QUALIFIED JURY WHEEL AND COMMUNITY AND THE CAUSES
AND IMPACT OF THE CAUSES ON THE ABSOLUTE DISPARITY**

Entity	Percent of Entity		Absolute Disparity: Difference in Percentage Points From Community		Difference in Percentage Points Due to Cause		Percent of Difference Qualified Jury Wheel to Community Due to this Cause	
	African American or Black	Hispanic or Latino	African American or Black	Hispanic or Latino	African American or Black	Hispanic or Latino	African American or Black	Hispanic or Latino
<u>Cause of differences between entity demographics:</u>								
<u>Qualified jury wheel</u>	8.76	10.48	3.69	3.64				
Due to differences in being found to be qualified as a juror or being excused					2.58	2.59	69.9%	71.2%
Due to clerical error in handling alternative mailing address					-0.14	-0.10	-3.8%	-2.7%
<u>Master wheel</u>	11.20	12.97	1.25	1.15				
Failure to consider inactive voters except in Dutchess					0.34	0.43	9.2%	11.8%
Due to underrepresenting counties in both Manhattan and White Plains					0.34	0.39	9.2%	10.7%
<u>Master wheel if simple random sample</u>	11.88	13.79	0.57	0.33				
Differences in U.S. citizens voting age and those registered to vote and/or disconnect in time between community benchmark and voter lists					0.57	0.33	15.4%	9.1%
<u>Community</u>	12.45	14.12						

VI. REVIEW OF JEFFREY MARTIN'S AFFIDAVIT

39. Mr. Martin computes the percent African American on the White Plains qualified jury wheel and the estimated percent African American and Hispanic in White Plains, Manhattan, and the overall Southern District using the 5-year ACS. I can reproduce his calculations. He then compares the demographics of the White Plains qualified jury wheel to that of the White Plains community, the Manhattan community, and the Southern District community.

40. He computes the absolute difference between the White Plains qualified jury wheel and the White Plains community based on the 5-year 2018 ACS data, as I do. While I did not compare the White Plains qualified jury wheel and the Manhattan and Southern District community estimates, I do not dispute his reported absolute disparities. However, since the percent African American and Hispanic in Manhattan and the Southern District are significantly larger than in White Plains, and the master jury wheel is designed to represent White Plains, by design the White Plains master jury wheel and hence its qualified jury wheel will be significantly demographically different, since the communities' demographics are different.

41. Mr. Martin properly notes that the master jury wheel was not a valid simple random sample, so it does not properly represent the voter lists from which potential jurors are selected, due to what he labels a proration issue (the voters in different overlapping counties have a different selection rate than those non-overlapping counties) and the fact that inactive voters on the voter list were not selected in five counties. He also points out that, in making the master jury wheel, there was a clerical error in that zip codes were not included for individuals who provided an alternative mailing address when they registered to vote. The result of this error was that voters who provided an alternative mailing address never responded to the questionnaire, presumably because they never received it due to the clerical error.

42. While the issues raised by Mr. Martin are valid, he never actually measures their impact to determine if they meaningfully impact the demographics of the qualified jury wheel. If he had done so, as I actually did and report above, he would have found the issues about which he raises concerns explain relatively little of the absolute disparity in the representation of African American and Hispanic individuals between the qualified jury wheel and the community.

43. Mr. Martin's declaration expends much effort in defining populations of persons in the community who are not or cannot be in the master jury wheel (*i.e.*, reason 2 above). This is of little value. The issue is only whether and to what extent they are different, what is causing them to be different, and to what extent it causes them to be different. Thus, the issue is not whether someone is left out. For example, clearly persons in the community in 2020 who were too young to register to vote on November 2016, or persons who moved into the area after November 2016 are not on the November 1, 2016 voter registration lists. However, the issue is not who is on the current voter registration list but was not on the November 1, 2016 voter registration list. Rather, the question is what is causing the difference between the qualified jury wheel—that is based on the November 1, 2016 voter population—and the benchmark for the community—which is based on the 5-year ACS. Persons who move into White Plains are also not in the benchmark computation. If we are to update the voter registration lists to match the current community benchmarks (an impossible task) we would also need to update the community benchmark. Mr. Martin presents the difference in the wheels based on the November 2016 voter registration lists and the benchmark based on the community demographics between 2014 and 2018. The relevant question is what factors cause the difference he presents, and to what extent these factors cause the absolute disparity between the community benchmark and the

qualified jury wheel. Mr. Martin's presentation, unlike my analysis, never does this. Instead, he cherry picks issues which might impact the absolute disparity, but never measures the extent to which it does, or he simply cherry picks persons who are in the community currently but not in November 1, 2016, without any attempt to update the community benchmarks.

A handwritten signature in cursive script, reading "Bernard R. Siskin".

Bernard R. Siskin, Ph.D.

Dated: December 7, 2020

APPENIDX A

BLDS, LLC

Bernard R. Siskin, Ph.D.
Director

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SUMMARY

Bernard Siskin received his B.S. degree in Mathematics from the University of Pittsburgh and a Ph.D. in Statistics from the University of Pennsylvania. For many years, he taught statistics at Temple University and served as Chairman of the Department of Statistics.

Dr. Siskin has specialized in the application of statistics in law, particularly in the area of analyzing data for statistical evidence of discrimination. He has testified for both plaintiffs and defendants in more than 200 cases, many of which were large employment class actions. In addition to discrimination studies, he has conducted statistical studies and has testified in commercial and environmental cases involving statistical issues.

Dr. Siskin has frequently been appointed by federal judges as a neutral expert to aid the court in statistical issues and he was the statistical consultant to the Third Circuit Court of Appeals Task Force on Equal Treatment in the Courts. I was also appointed by the Court as an Expert to measure the accuracy of the CCC vehicle valuation methodology and I suggested possible modifications to the methodology.

Dr. Siskin is the author of many articles and textbooks on statistics and quantitative techniques including *Elementary Business Statistics*, *Encyclopedia of Management* and *Quantitative Techniques for Business Decisions*. He has also written and lectured extensively on the use of statistics in litigation.

He has served as a statistical consultant to the U.S. Department of Justice, the Equal Employment Opportunity Commission, the U.S. Department of Labor, the Federal Bureau of Investigation, the Central Intelligence Agency, the Environmental Protection Agency, the National Aeronautics and Space Administration, Consumer Financial Protection Bureau (CFPB), OFCCP and Fannie Mae (the Federal National Mortgage Association) and Freddie Mac (the Federal Home Loan Mortgage Corporation), as well as numerous other federal, state and city agencies and Fortune Five Hundred corporations.

BLDS, LLC

EDUCATION

University of Pennsylvania

Ph.D., Statistics (Minor, Econometrics), 1970

University of North Carolina

Graduate Study (Major, Economics; Minor, Statistics), 1966

University of Pittsburgh

B.S., Mathematics (Minor, Economics), 1965

PRESENT POSITION

BLDS, LLC, Director, 2011

TEACHING EXPERIENCE

Temple University, Adjunct Professor of Law School, 1992 to 2005

Temple University, Tenured Associate Professor of Statistics, 1973 to 1984

Temple University, Chairman-Department of Statistics, 1973 to 1978

Temple University, Assistant Professor of Statistics, 1970 to 1973

Temple University, Instructor of Statistics, 1968 to 1970

OTHER POSITIONS HELD

LECG, Director, 2003 to 2011

Center for Forensic Economic Studies, Senior Vice President, 1991 to 2003

National Economic Research Associates, Inc., Senior Vice President, 1989 to 1991

National Economic Research Associates, Inc., Vice President, 1986 to 1989

Center for Forensic Economic Studies, Ltd., President, 1984 to 1986

Center for Forensic Economic Studies, Ltd., Consultant, 1980 to 1984

PUBLICATIONS

Books

1. B. Siskin and N. Schmidt, "Proper Methods for Statistical Analysis of Promotions," *Adverse Impact Analysis: Understanding Data, Statistics, and Risk*, Psychology Press, 2017, S. Morris and E. Dunleavy, eds.
2. B. Siskin, "Employment Discrimination Litigation: Behavioral, Quantitative, and Legal Perspectives" John Wiley & Sons, Inc. 2005, Chapter 5 *Statistical Issues in Litigation* (with Joseph Trippi).
3. B. Siskin, "Use of Statistical Models to Provide Statistical Evidence of Discrimination in the Treatment of Mortgage Loan Applicants: A Study of One Lending Institution," *Mortgage Lending, Racial Discrimination and Federal Policy*, Urban Institute Press, 1996, J. Georing and R. Wienk, eds.
4. B. Siskin and J. Staller, *What Are The Chances?*, Crown Publishers, 1989.

BLDS, LLC

PUBLICATIONS (Continued)

Books (Continued)

5. B. Siskin and R. Johnson, *Elementary Statistics: A First Course*, Duxbury Press, 1982.
6. B. Siskin and R. Johnson, *Elementary Business Statistics*, Duxbury Press, 1979
2nd Edition, 1985
7. B. Siskin, *Encyclopedia of Management*, McGraw Hill, 1979. (Ed. Les Bechtel).
8. B. Siskin and R. Johnson, *Quantitative Techniques for Business Decisions*, Prentice Hall, 1976.

Articles

1. B. Siskin and D. Griffin, "Litigating Employment Discrimination & Sexual Harassment Claims," *Litigation Handbook Series*, 2002.
2. B. Siskin, H. Carter, V. Lee, G. Page, M. Parker, R.G. Ford, G. Swartzman, S. Kress, S. Singer and D.M. Fry, "The 1986 Apex Houston Oil Spill in Central California: Seabird Mortality and Population Impacts, Injury Assessments, Litigation Process, and Initial Restoration Efforts," *Marine Ornithology*, 2002.
3. B. Siskin, "Utilizing Statistics in Discrimination Cases," *Litigation Handbook Series*, 2001.
4. B. Siskin, B. Sullivan, J. Staller, and E. Hull, "Defending and Proving Damages in Employment Discrimination Cases," *Litigation Handbook Series*, 2000.
5. B. Siskin, "Litigating Employment Discrimination Cases," *Litigation Handbook Series*, 1998.
6. B. Siskin and D. Kahn, "Litigating Employment Discrimination Cases," *Litigation Handbook Series*, 1997.
7. B. Siskin, R. DuPont, D. Griffin, S. Shiraki, and E. Katze "Random Workplace Drug Testing. Does It Primarily Identify Casual or Regular Drug Users?," *Employment Testing Law & Policy Reporter*, Vol. 4, Number One, 1995.
8. B. Siskin, R. DuPont, D. Griffin, S. Shiraki, and E. Katze "Random Drug Tests at Work: The Probability of Identifying Frequent and Infrequent Users of Illicit Drugs," *Journal of Addictive Diseases*, Vol. 14, Number 3, 1995.
9. B. Siskin, J. Staller, B. Sullivan and L. Freifelder, "Litigating Employment Discrimination Cases," *Litigation Course Handbook Series*, 1995.
10. B. Siskin, "Comparing the Role of Statistics In Lending and Employment Cases," *Fair Lending Analysis: A Compendium of Essays on the Use of Statistics*, American Bankers Association, 1995.
11. B. Siskin, "Relationship Between Performance and Banding," *Human Performance*, Vol. 8, No. 3, July 1995.
12. B. Siskin, "Statistical Issues in Litigating Employment Discrimination Claims," *Federal Publications*, 1993.
13. B. Siskin, "Use of Statistical Models to Provide Statistical Evidence of Discrimination in the Treatment of Mortgage Loan Applicants: A Study of One Lending Institution," *Discrimination and Mortgage Lending Research and Enforcement Conference* Department of Housing and Urban Development, May 1993.

BLDS, LLC

SPEECHES (Partial List)

1. Alabama Bar Association
2. American Bar Association
3. American Financial Services Association
4. American Statistical Association
5. Defense Research Institute
6. Federal Bar Association
6. Harvard University
7. Institute of Industrial Research
8. International Organization of Human Rights Association
9. Law Education Institute
10. Law Enforcement Assistance Administration
11. Michigan Bar Association
12. National Center on Aging
13. Ohio Bar Association
14. Penn State University
15. Pennsylvania Human Relations Commission
16. Practising Law Institute
17. Security Industry Association
18. Women's Law Caucus: National Conference

STATISTICAL CONSULTANT (Partial List)

1. Attorney General's Office of the Commonwealth of Pennsylvania, and states of California, Oregon, Massachusetts, Connecticut, Mississippi, Louisiana and New Jersey
2. Board of Higher Education for Massachusetts and Oregon
3. Central Intelligence Agency (CIA)
4. Environmental Protection Agency (EPA)
5. Equal Employment Opportunity Commission (EEOC)
6. Federal Bureau of Investigation (FBI)
7. Freddie Mac (Federal Home Loan Mortgage Corporation)
7. Fannie Mae (Federal National Mortgage Association)
8. Homeland Security
9. International Organization of Human Rights Associations
10. Municipal Court of Philadelphia
11. National Aeronautics and Space Administration (NASA)
12. Office of Federal Contract Compliance, Department of Labor (OFCCP)
13. Pennsylvania Human Relations Commission
14. Security Exchange Commission
15. Third Circuit Court of Appeals Task Force on Equal Treatment in the Courts
16. U.S. Department of Agriculture
17. U.S. Department of Commerce
18. U.S. Department of Labor
19. U. S. Justice Department
20. Numerous Fortune 500 and other private corporations

Testimony Listing for Bernard R. Siskin, Ph.D.

<i>Date</i>	<i>Case Name</i>	<i>Location</i>	<i>Activity</i>	<i>On Behalf Of</i>
2019	Robertson, et al. v. Valley Communications Center	Philadelphia, PA	Deposition	Plaintiff
2019	Shauna Noel & Emmanuella Senat v. City of New York	New York City, NY	Deposition	Defendant
2019	Tillman Industrial Properties, et al. v. Mercantile Bank	Philadelphia, PA	Deposition	Plaintiff
2019	USA ex rel. Jose R. Valdez v. Aveta, Inc.; et al.	Washington, DC	Deposition	Defendant
2018	Health New, Inc. v. American International	Philadelphia, PA	Deposition	Plaintiff
2018	Kleinsasser v Progressive	Seattle, WA	Trial	Plaintiff
2017	Greater Birmingham Ministries, et al. v. Honorable Joh	Washington, DC	Deposition	Plaintiff
2017	Independent Living Center of Southern CA, et al v City	Washington DC	Deposition	Plaintiff
2017	Marc Daniel Vigna v. Allstate Insurance Company	Philadelphia, PA	Deposition	Plaintiff
2017	Mark Kleinsasser, et al v Progressive Direct Insurance	Philadelphia PA	Declaration	Plaintiff
2016	Brenda Koehler, et al v Infosys Technologies, et al	Washington DC	Deposition	Defendant

APPENDIX B

SDNY_JA_000001 BronxCounty
SDNY_JA_000002 DutchessCounty
SDNY_JA_000749 ManhattanCounty
SDNY_JA_000750 OrangeCounty
SDNY_JA_000751 PutnamCounty
SDNY_JA_000752 ROCKLAND COUNTY VOTERS 11132012
SDNY_JA_000753 RocklandCounty
SDNY_JA_000754 SullivanCounty
SDNY_JA_000755 WestchesterCounty
SDNY_JA_000756 JMS Wheel 5 NYC
SDNY_JA_000757 JMS Wheel 5 WP
SDNY_JA_000758 Qualified JMS Wheel 5 NYC
SDNY_JA_000759 Qualified JMS Wheel 5 WP

SDNY_JA_000116-000120 Item 8 Statistical or Demographic analyses Source List Race Gender Report

Memorandum Of Law In Support Of Motion To Dismiss The Indictment As It Was Obtained In Violation Of The Fifth And Sixth Amendments To The United States Constitution And In Violation Of The Jury Selection And Service Act

Declaration of Jeffrey Martin dated November 9, 2020

Supplemental Declaration of Jeffrey Martin dated November 20, 2020

The defense used data as of November 1, 2016:
<https://www.elections.ny.gov/EnrollmentCounty.html>

NYSVoter Enrollment by County, Party Affiliation and Status
Voters Registered as of November 1,
2016 https://www.elections.ny.gov/NYSBOE/enrollment/county/county_nov16.pdf